

REMARKS

Claims 5 - 8 are currently pending in this application. By the present amendment, claims 1 and 2 have been canceled, claims 3 - 4 were previously cancelled. Claims 5 - 8 are new. No new matter has been introduced into the application by these amendments. In view of the cancellation of claims 1 - 2, the below remarks deal with claims 5 - 8.

35 U.S.C. §112

Claims 2 and 4 were rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, in claims 2 and 4, the Action states that the insertion of "consisting of" is considered new matter. Applicants respectfully traverse this rejection.

To the extent that claims 2 and 4 have been canceled, this rejection will be addressed with respect to claims 5 and 8. Claim 5 is directed to a method for producing an indexable insert fastening screw, having an interior engaging member. The method includes providing a source material of an ultra high-strength steel. The ultra high-strength steel has a composition of 0.03% carbon, 5.0% molybdenum, 18.5% nickel, 8.5% cobalt, 0.6% titanium, 0.1% aluminum, and 77.27% iron. The screw, including the interior engaging member, is cold formed from the source material.

Claim 8 is directed to an indexable insert fastening screw having a cold-formed monolithic head and shaft. An interior engaging member is disposed within the head. The screw is formed from an ultra high-strength steel that has a

composition of: 0.03% carbon, 5.0% molybdenum, 18.5% nickel, 8.5% cobalt, 0.6% titanium, 0.1% aluminum, and 77.27% iron.

In paragraph [0019] of the specification as filed, it is specifically recited that "a source material of an ultra high-strength steel with the composition C 0.03, Mo 5.0, Ni 18.5, Co 8.5, Ti 0.6, Al 0.1, moiety Fe is considered particularly suitable" for the present invention. This recitation provides the specific percentages of the carbon, molybdenum, nickel, cobalt, titanium, aluminum and iron that make-up the preferred composition of the ultra high-strength steel for use in the present invention. The composition is recited in the known format for steel with the percentages of the constituent materials being listed with the balance ("moiety") being iron. This recitation provides specific support for the formula recited in claim 2 as "consisting of" the recited composition. To the extent that "moiety Fe" is recited, this clearly indicates that the remainder of the composition not specified by specific percentages of the other elements recited is iron. This provides full support for a "consists of" claim format as nothing in the specification or claims recites that other elements are included. Accordingly, withdrawal of the Section 112, first paragraph rejection of claim 2 is respectfully requested.

35 U.S.C. §102

Claims 1 and 3 were rejected in the action under 35 U.S.C. §102(b) as anticipated by U.S. 2,084,079 to Clark. The action incorrectly states that Clark discloses making a screw using "ultra high-strength" steel that is cold formed to form the interior engaging member. Applicants respectfully traverse this rejection.

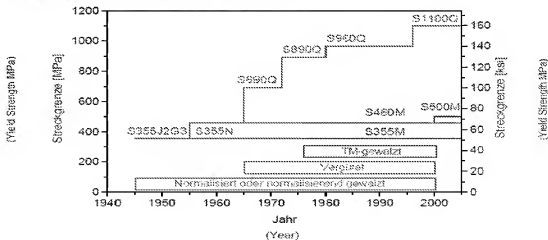
Claim 5 is directed to a method for producing an indexable insert fastening screw, having an interior engaging member. The method includes providing a source material of an ultra high-strength steel. The ultra high-strength steel has a

composition of 0.03% carbon, 5.0% molybdenum, 18.5% nickel, 8.5% cobalt, 0.6% titanium, 0.1% aluminum, and 77.27% iron. The screw, including the interior engaging member, is cold formed from the source material.

Claim 8 is directed to an indexable insert fastening screw having a cold-formed monolithic head and shaft. An interior engaging member is disposed within the head. The screw is formed from an ultra high-strength steel that has a composition of: 0.03% carbon, 5.0% molybdenum, 18.5% nickel, 8.5% cobalt, 0.6% titanium, 0.1% aluminum, and 77.27% iron.

Clark is directed to a screw having a cold-formed head. However, there is no discussion whatsoever that this method is usable for use in connection with an ultra high-strength steel, such as the molybdenum-nickel-cobalt steel of the present invention. To the extent that a prior art reference is only useful for teaching what was known at the time of that invention, here specifically November 15, 1935, it is clear that this was not directed to cold-forming the head of an ultra high-strength steel screw used for an indexable insert. Ultra high-strength steel was not known before 1940 as evidenced by the chart below.

Historische Entwicklung der hoch- und höherfesten Feinkornbaustähle
(Historic Development of High- and Ultra high-Strength Fine-Grained Structural Steels)



In fact, the cold working of high-strength and ultra high-strength steel is only carried out today in the working of sheet metal, not in the production of indexable insert fastening screws. Screws produced by the method of the present invention are used to attach cutting plates in high speed cutting processes. A zero-defect quota is required in such applications since the cutting heads rotate between 30,000 and 40,000 RPM. If a fastening screw were to fail in use, the cutting plate would become a ballistic projectile.

As noted in the attached copy of the Declaration of inventor Ernst Rohner under 37 C.F.R. §1.132 previously submitted on April 13, 2007, a person skilled in the art would not have used the method of Clark to cold-form a screw head out of ultra-high strength steel at the time of Clark's invention. Additionally, contrary to the Response to Remarks noted in the Action, as indicated in the attached 132 Declaration (copy), those skilled in the art would understand that an ultra high-strength steel is a steel with a strength of over 560 Mpa, and that this would be an accepted industry meaning. To the extent that the words in the claim must be given the plain meaning to those of ordinary skill in the art at the time the invention was made, it is respectfully submitted that the definition of ultra high-strength steel as having a strength of over 560 mpa must be used. See MPEP §2111.01. In view of this and the evidence provided in the 132 Declaration, withdrawal of the Section 102 rejection is respectfully requested.

35 U.S.C. §103

Claims 2 and 4 were rejected in the Action as unpatentable over Clark as applied to claims 1 and 3 further in view of ASM Handbooks Online. Applicants respectfully traverse this rejection.

Claim 5 is directed to a method for producing an indexable insert fastening screw, having an interior engaging member. The method includes providing a source material of an ultra high-strength steel. The ultra high-strength steel has a composition of 0.03% carbon, 5.0% molybdenum, 18.5% nickel, 8.5% cobalt, 0.6% titanium, 0.1% aluminum, and 77.27% iron. The screw, including the interior engaging member, is cold formed from the source material.

Claim 8 is directed to an indexable insert fastening screw having a cold-formed monolithic head and shaft. An interior engaging member is disposed within the head. The screw is formed from an ultra high-strength steel that has a composition of: 0.03% carbon, 5.0% molybdenum, 18.5% nickel, 8.5% cobalt, 0.6% titanium, 0.1% aluminum, and 77.27% iron.

Applicants specifically note that Clark is silent with respect to such a material and based on its age and illustrated process, teaches the formation of a stamped screw head made from medium or high-strength steel at best. There is no suggestion or disclosure that this could possibly refer to an ultra high-strength steel, let alone the specific steel recited in claims 5 and 8.

ASM Handbooks Online fails to remedy the deficiency of Clark in this respect. There is no suggestion or disclosure of the specific ultra high-strength steel composition recited in claims 5 and 8 in ASM Handbooks Online. None of the disclosed grades of high-strength maraging steel in the ASM Handbooks Online include as much nickel as the recited composition in combination with the recited amounts of molybdenum, cobalt, carbon, titanium and aluminum. The high nickel content ultra high-strength steels of ASM Handbooks Online in fact are only provided in the cobalt-free and low-cobalt grades of material. Accordingly, withdrawal of the Section 103 rejection is respectfully requested.

Conclusion

If the Examiner believes that any additional minor formal matters need to be addressed in order to place the present application in condition for allowance, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing Amendments and Remarks, applicants respectfully submit that the present application, including claims 5 - 8, is in condition for allowance, and a Notice to that effect is respectfully requested.

Respectfully submitted,

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Enclosure